

WHAT IS CLAIMED IS:

1. Apparatus for producing a digital bitstream containing an interactive program guide for a digital information distribution system comprising:

means for combining, in a frame synchronized manner, background imagery with at least one video sequence and at least one graphic containing program guide information to form a composited frame sequence; wherein the combining step further comprises:

means for compositing, frame-by-frame, at least one video sequence onto said background imagery to form a background sequence; and

means for compositing a plurality of program guide graphics onto said background sequence, where a different program guide graphic is composited onto said background sequence to form a plurality of program guide frame sequences that represent individual program guide pages; and

means for encoding the composited frame sequence to compress information therein to form a digital bitstream.

2. The method of claim 1 wherein said encoding means further comprises:

means for separately encoding each of said program guide frame sequences to form a digital bitstream for each of the program guide frame sequences.

3. The method of claim 2 further comprising:

means for multiplexing each of the digital bitstreams into a common transport stream.

4. The method of claim 3 wherein fifteen program guide sequences are formed, encoded, and contained in a common transport stream.

5. The method of claim 4 further comprising:

means for encoding an audio signal associated with one of the video sequences; and

means for multiplexing the encoded audio signal into the common transport stream.

6. The method of claim 3 wherein said means for multiplexing further comprises:

means for multiplexing foreground program guide data into said common transport stream.

7. Apparatus for producing a digital bitstream representing an interactive program guide for a digital information distribution system comprising:

a video compositor for compositing background imagery with at least one video frame sequence to form a background frame sequence;

5 a plurality of program guide compositors for compositing a plurality of program guide graphics onto said background sequence, where a different program guide graphic is composited onto said background sequence to form a plurality of program guide frame sequences that represent individual program guide pages;

10 a plurality of encoders for separately encoding each of said program guide frame sequences to form a plurality of bitstreams;

a multiplexer for multiplexing said plurality of bitstreams into a transport stream; and

a program guide graphics generator for producing said program guide graphics and foreground overlay graphics.

15 8. The apparatus of claim 7 wherein each of said plurality of program guide compositors comprises:

an alpha framestore for storing a bitmap array of weighing functions that control transparency of said program guide graphics with respect to said background imagery;

20 a video framestore for buffering said program guide graphics on a frame-by-frame basis to ensure alignment with said background imagery and at least one video frame sequence; and

a means for combining said program guide graphics with said background imagery and said at least one video frame sequence.

25 9. The apparatus of claim 7, wherein said video compositor comprises:

a first serial-to-parallel converter adapted for receiving said background imagery and a first video frame sequence;

30 a first compositor, coupled to said first serial-to-parallel converter for synchronizing frames from said background imagery and a first video frame sequence, said first compositor combining said first video frame sequence at a first position in said background imagery; and

a second serial-to-parallel converter adapted for receiving a second video frame sequence;

a second compositor, coupled to an output of said second serial-to-parallel converter and an output of said first compositor, for synchronizing output information from said first compositor with said second video frame sequence from said serial-to-parallel converter, said second compositor combining said second video frame sequence at a second position in said background imagery.

10. The apparatus of claim 9, wherein said first and second compositors respectively resize said first and second video frame sequences prior to merging said background imagery and said first and second video frame sequences.

11. The apparatus of claim 8 wherein an output of said second compositor is coupled to a third serial-to-parallel converter to produce a serial bitstream.

12. The apparatus of claim 7 wherein said encoders are MPEG type encoders.